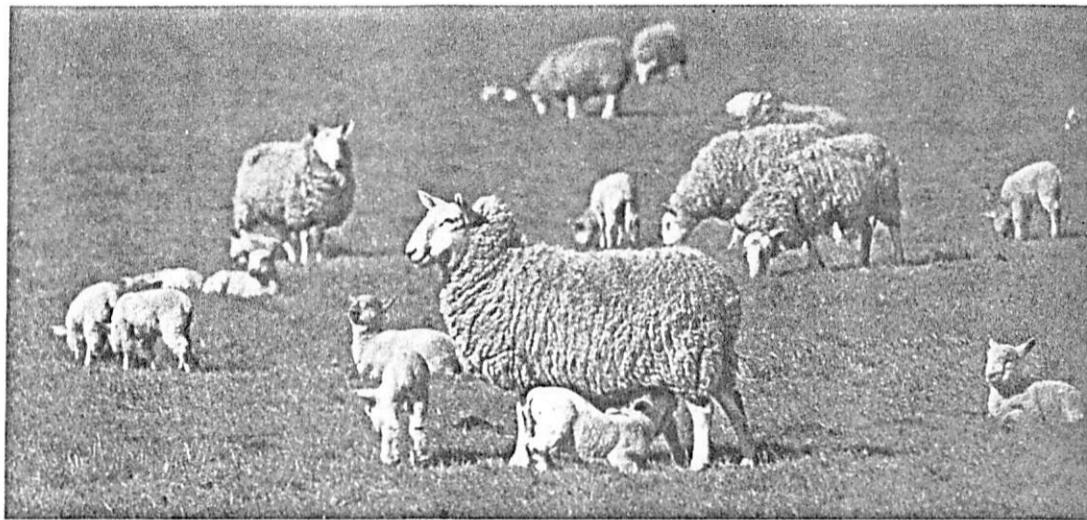


SHEEP



John Moss, Colorist

Cheviot and Leicester Crossbreed

Sheep provide clothing and food for man. The warm, fleecy hair that covers the bodies of domestic sheep is made into comfortable wool cloth. Many people enjoy the strong taste of mutton or the milder taste of tender lamb. People in nearly every part of the world raise sheep.

SHEEP are among the most important animals that man has tamed because they provide both food and clothing. Long before man began to write history, shepherds watched the flocks in the fields to guard them against wild animals. Today sheep are raised in all parts of the world. Australia is the world's leading sheep-producing country, raising about one-sixth of the world's sheep. In Australia, there are about 15 sheep for every person. In New Zealand, there are about 20 sheep for every person. Some states in the western United States also have more sheep than people. Sheep yield wool, meat, and leather. They also furnish the raw materials for many byproducts, such as glue, tallow, suet, soap, fertilizer, cosmetics, and the catgut used in stringing tennis rackets.

The Body of the Sheep

Domestic sheep vary greatly in size. The *ewes* (females) of some breeds may weigh as little as 100 pounds (45 kilograms). Other ewes may weigh more than 225 pounds (102 kilograms). The *rams* (males) are larger. Their weight, including a heavy coat of wool, ranges from 150 to 350 pounds (68 to 159 kilograms).

Sheep are different from goats in many ways. They do not have the familiar beard of the billy goat, nor the well-known "goaty" odor. Sheep have a gland between their toes which is not found among the goats. The horns of a ram usually curve outward. In some breeds, both rams and ewes have horns. In other kinds, only the rams have horns, or the breed is hornless.

Sheep walk upon hoofs that are divided into two toes. Their ankles are slim. The upper part of their legs is muscular, helping them to move quickly and easily.

Sheep have no incisor, or cutting, teeth on their upper jaws, though they have eight on their lower jaws. They have six grinding teeth on the back part of each jaw.

Sheep can bite off grass much closer to the ground than cattle can. In fact, where sheep have eaten their fill, there is little plant life left. Most sheep have tails, but these are cut off for reasons of cleanliness.

Sheep live for about 13 years. They begin breeding at the age of about two years, and have young every year after that. The mother carries the young sheep inside her body about five months before it is born.

Wild Sheep

Sheep are supposed to have come originally from the lofty plateaus and mountains of Central Asia. The largest wild sheep, the *argali*, lives in the Altai Mountains of Siberia and Mongolia. The male argali stands 4 feet (1.2 meters) high at the shoulders. His spiral horns are 20 inches (51 centimeters) around.

The great Marco Polo sheep of Asia live on the plateaus of Pamir, the "roof of the world," 3 miles (5 kilometers) above sea level. This sheep was first described by Marco Polo. The Marco Polo sheep is a little smaller than the argali, but it is remarkable for the wide spread of its horns. The *blue sheep*, or *bharal*, which is closely related to the goat, lives in Tibet. About half a dozen other kinds of wild sheep live in Asia.

Wild sheep look much like wild goats. Some kinds of wild sheep are thought to be halfway between sheep and goats. Wild sheep are high-spirited, daring, and self-reliant. They brave the fiercest storms of winter and climb higher than any other animals but mountain goats. Wild sheep live in bands among the mountains and plateaus of the Northern Hemisphere.

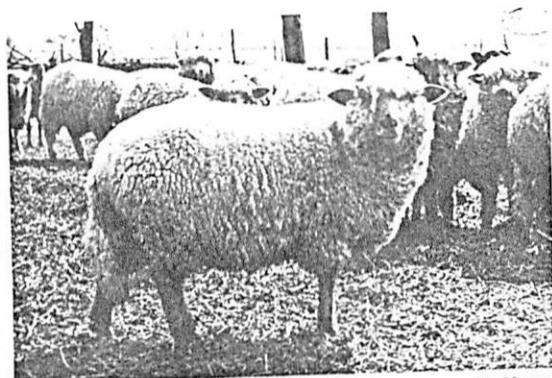
All the domestic breeds of sheep are descended from two different kinds of wild sheep. These are the *urial* that lives in Southern Asia, and the *mouflon*, which is the only kind of wild sheep still living in Southern Europe. Both of these sheep probably resemble their original

SHEEP



E. S. Ross

Karakul



Lia Munson

Suffolk and Corriedale Crossbreed



Tony Carr, Colorific

Colbred



G. R. Roberts

Romney



Adam Woolfitt, Woodfin Camp, Inc.

Cheviot

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Breeds of Domestic Sheep

Domestic sheep have been slowly and carefully changed from their wild ancestors. Originally, the wild sheep were tamed for the sake of their hides and milk. They were also used to carry burdens. Very early they became important for their fleece. The coarse hair that covered the wild sheep was replaced by a soft coat of wool through breeding. Only in the last 200 years have breeders developed sheep primarily for their meat.

Sheep are classified into five groups, depending upon their fleece. These are *fine wool*, *long wool*, *crossbred wool*, *medium wool*, and *coarse wool*. The coarse wool group is of little importance.

Fine-Wooled Sheep. Most of our fine-wooled sheep originated from the Spanish Merino. These sheep were raised in Spain as far back as history has been written. Spanish Merino sheep were greatly prized. The Spanish government forbade taking them out of the country but many were smuggled into Germany, France, and England. It was in these other countries that the Merino was developed into the modern type of sheep.

There are more sheep with Merino blood than any other breed. American Merino sheep have white faces and legs, and are thickly covered with fine wool down to their toes and noses. Rams usually have horns.

SHEEP

The *Rambouillet* is another important breed which is descended from the Spanish Merino. It is named after a town in France, but it was largely developed in Germany, and, later, in the United States. The breed began more than 150 years ago. This breed is very hardy. The *Debouillet* breed was developed in New Mexico about 1920. This breed was developed to produce wool and mutton under difficult range conditions.

Long-Wooled Sheep. Four of the most important long-wooled breeds come from England. They are the *Lincoln*, *Leicester*, *Cotswold*, and *Romney*. Lincoln sheep are among the largest of domestic sheep, and produce the longest fleece. The Leicester sheep is especially valuable to stock breeders for crossing with other sheep. It is the ancestor of most of the other long-wooled breeds of sheep. American ranchers have also used the Cotswold in improving quality, crossing the rams with Merino ewes. Romney sheep, which originated in southeastern England, are popular in New Zealand and in Oregon and California.

Crossbred-Wooled Sheep. Crossing two or more of the accepted domestic breeds to produce a new breed has become very common in developing modern types of sheep. Except for the Merino and Rambouillet types, probably all modern breeds are the result of such crossing. The *Corriedale* is a cross-bred sheep that has become popular throughout Australia, New Zealand, South America, and the United States. In the Corriedale, the breeders have attempted to combine the maximum wool and mutton production, to develop what is known as the dual purpose sheep. The Corriedale was bred from fine-wool and long-wool sheep in Australia and New Zealand. The breed was first imported into the United States in 1914. Similar crosses have also been made. They have resulted in the *Columbia*, *Romeldale*, *Panama*, *Montadale*, *Polwarth*, and *Targhee* breeds.

Medium-Wooled Sheep. These sheep are grown primarily for the meat they produce, but they also are a

source of wool. The most important breeds are the *Hampshire*, *Shropshire*, *Southdown*, and *Suffolk*. Most farmers raise these sheep as purebreds. But in the West, they are used for breeding with the ewes of native sheep in order to produce lambs for the market.

The Shropshires are extremely popular on farms. Together with the Hampshire and Southdown, they are largely raised east of the Missouri River. The Hampshire and the Suffolk are extremely popular west of the Missouri. These breeds came from England. The face, ears, and legs of the Hampshire range in color from dark brown to black. The black face, ears, and legs of the Suffolk contrast sharply with its white wool body. The Southdown is a rather small sheep with a square-shaped body. The *Dorset* sheep is raised along the Atlantic Coast. This breed produces lambs at any season, and therefore is valuable for producing lambs for the winter market. Other important medium-wool breeds are the *Cheviot*, *No-Tail*, *Oxford*, *Tunis*, and *Ryeland*.

Coarse-Wooled Sheep. Karakul lambs have a glossy fur that is used to make women's fur coats. Lambs are usually killed and peltsed when they are 3 to 10 days old, when the fur is most valuable. The *Scottish Blackface*, called *Blackface Highland* in the United States, produces a wool that is valuable for tweeds, carpets, and mattresses. Navajo sheep also produce a coarse wool for rugs and blankets.

Raising Sheep

There are two distinctly different ways of raising sheep in the United States. The most important way is on the range. Here sheep are herded about in large bands containing from 1,000 to 2,000 or more sheep. The herds are moved about on large tracts of land which may be owned by the sheep owner, or may be leased from another owner or from the government. The sheep eat grass in the pasture.

The other important way of raising sheep is on farms. The farmer raises from thirty to a few hundred head of sheep, keeping them in fenced pastures. During the

winter they are fed grain.

Throughout history, sheep have been raised in places that are far from populated areas. There are two reasons for this. First, sheep are adapted to most products, particularly wool, which is a major portion of its bulk. Furthermore, it can be stored for long periods of time without deteriorating. In the second place, sheep are hardy animals and like to eat woods and shrubs. They can live on water for long periods of time and can survive on dry plants.

In the United States, most sheep are raised in Mississippi. Wool sheep are raised in Ohio, and in a few other states. Sheep raised in practically all parts of the United States can produce the mutton it needs. But it is not the best mutton because of the demands of the market.

Enemies

Sheep are attacked by many enemies. Foot rot and sore mouth are the most common diseases. They suffer from internal parasites, and mange. Parasites called *sheep scab* cause mange. Eating wild animals often times kill sheep. The kea, a bird from New Zealand, has a sharp, hooked bill that it uses to tear the flesh of the sheep's flesh and fat.

Scientific Classification. Sheep belong to the family of goats, and buffaloes, belonging to the subfamily Caprinae. The urial sheep is genus *Ovis*, species *Ovis canadensis*. The mouflon sheep is *O. musimon*. The wild sheep is *O. canadensis*.

Related Articles in WORLD Book:
 Animal (color pictures)
 Animals of the Mountain
 Argentina (picture)
 Australia (Agriculture; picture)
 Bighorn
 Foot-and-Mouth Disease
 Great Britain (picture)
 Karakul
 Lamb
 Lanolin

SHEEPDOG. Almost every sheep farmer has a sheepdog. They are used to guard the flock and watch the sheep. They are trained to follow the back to the flock, and keep the flock together. They also defend the flock from predators. Sheepdogs are learned from their mothers.

The American Kennel Club lists ten breeds of sheepdogs. They are (1) *Border Collie*, (2) *Collie*, (3) *Shetland Sheepdog*, (4) *German shepherd dog*, (5) *Border Collie*, (6) *German Shepherd Dog*, (7) *Old English Sheepdog*, (8) *Border Collie*, (9) *Border Collie*, and (10) *Standard Collie*. There are also several smaller breeds of sheepdogs that are not listed here.

See also Dog (color pictures).

SHEFFIELD (pop. 511,860) is a city in South Yorkshire, England. It lies about 160 miles northwest of London on wooded slopes between the Rivers Don and Derwent. For location, see England (map). The city is the home of the British steel industry, which was founded in 1907.

Leading Sheep-Raising States

Number of sheep in the state in 1976

Texas	2,600,000
Wyoming	1,265,000
California	1,052,000
Colorado	920,000
South Dakota	686,000
Montana	635,000
New Mexico	590,000
Utah	590,000
Idaho	536,000
Ohio	500,000

Source: U.S. Department of Agriculture.

Leading Sheep-Raising Countries

Number of sheep in the country in 1976

Australia	154,500,000
Russia	141,025,000
China	*73,267,000
New Zealand	56,700,000
Turkey	40,600,000
India	*40,000,000
Iran	38,000,000
Argentina	36,500,000
South Africa	34,950,000
Brazil	25,100,000

*1975 estimate, latest available figure.
 Sources: U.S. Department of Agriculture; Food and Agriculture Organization of the United Nations.

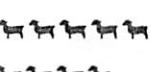
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sheep is on farms. hundred head of es. During the



winter they are fed grain and hay grown on the farm.

Throughout history, sheep have generally been raised in places that are far from cities and other thickly populated areas. There are two main reasons for this. Compared to most products, wool is very valuable in proportion to its bulk. Furthermore, it does not spoil. Therefore, it can be stored and shipped over long distances. In the second place, sheep tend to herd together, and therefore they can be handled in large bands in open country with very little labor. Sheep like to eat woods and shrubs. They can live without water for long periods of time. This permits farmers to raise sheep on dry plains all over the world.

In the United States, most sheep are raised west of the Mississippi. Wool sheep predominate in the West, in Ohio, and in a few other sections. Mutton sheep are raised in practically all parts of the country. The United States can produce nearly all the lamb and mutton it needs. But it imports much of the wool it uses, because of the demand for special types of wool.

Enemies of Sheep

Sheep are attacked by various parasites and diseases. Foot rot and sore mouth are common diseases. Sheep suffer from internal parasites, and also from a disease called *sheep scab* caused by mites and ticks. Meat-eating wild animals often attack sheep, and dogs sometimes kill sheep. The kea parrot of New Zealand sinks its sharp, hooked bill into the sheep's back and eats the sheep's flesh and fat.

Scientific Classification. Sheep, together with cattle, goats, and buffaloes, belong to the bovid family, *Bovidae*. The urial sheep is genus *Ovis*, species *O. vignei*. The mouflon sheep is *O. musimon*. Domesticated sheep are genus *Ovis*, species *O. aries*. TONY J. CUNHA

Related Articles in WORLD Book include:

Animal (color pictures)	Livestock
Animals of the Mountains	Mange
Argentina (picture)	Mutton
Australia (Agriculture; picture)	New Zealand (pictures)
Bighorn	Ranching
Foot-and-Mouth Disease	Roquefort
Great Britain (picture)	Ruminant
Karakul	Uruguay (picture)
Lamb	Wool
Lanolin	

SHEEPDOG. Almost everywhere that sheep have been raised, a type of dog has been developed to herd and watch the sheep. The dogs turn wandering sheep back to the flock, and keep the flock together. They also defend the flock from attacks by wolves and other animals. Sheepdogs are loyal, gentle, and intelligent.

The American Kennel Club recognizes 10 breeds of sheepdogs. They are (1) *Belgian sheepdog*, (2) *Briard*, (3) *collie*, (4) *German shepherd dog*, (5) *Great Pyrenees*, (6) *komondor*, (7) *old English sheepdog*, (8) *puli*, (9) *Shetland sheepdog*, and (10) *standard schnauzer*. See the articles on these breeds in WORLD Book. Many countries have breeds of sheepdogs that are not recognized in the United States. OLGA DAKAN

See also Dog (color picture: Working Dogs).

SHEFFIELD (pop. 511,860) is a city in Yorkshire, England. It lies about 160 miles (257 kilometers) northwest of London on wooded slopes overlooking the Sheaf and Don rivers. For location, see GREAT BRITAIN (political map). The city is the home of Sheffield University, which was founded in 1905. German bombers dam-

SHELL

aged the medieval Cathedral of Saints Peter and Paul during World War II, but it was later repaired.

The city has been known for its fine cutlery since the 1300's. Candlesticks and teapots of *Sheffield plate* (silver on copper) are treasured possessions. During World War II, Sheffield's steel foundries and mills made armor plate and weapons.

FREDERICK G. MARCHAM

SHEHAN, LAWRENCE JOSEPH CARDINAL (1898-

), is an American religious leader. He was named a cardinal of the Roman Catholic Church in 1965 by Pope Paul VI. He also received the honorary title of primate of the United States because his Baltimore diocese is the oldest in the country. Cardinal Shehan was ordained a priest in 1922, and served at St. Patrick's Church in Washington, D.C., from 1923 to 1941. He became a bishop in 1945 and was appointed first bishop of Bridgeport, Conn., in 1953. He served as archbishop of Baltimore from 1961 until he resigned in 1974. Cardinal Shehan was born in Baltimore. THOMAS P. NEILL

SHEIK, *sheek*, or *shayk*, is an Arabic title referring either to an old and respected man or to the chief of a tribe or village. Sometimes a sheik is a religious leader. Only Muslims use the title of sheik. A sheik's power usually depends upon his own will and character. Songs and stories have pictured the sheik as a romantic figure.

SHEKEL, *SHEHK uhl*, is an ancient term that meant a unit of weight. Later it was used to mean a gold or silver coin. The shekel was used as a weight by the Babylonians, Phoenicians, and Hebrews. The Bible often refers to the Hebrew shekel. It weighed about 218 grains, or about $\frac{1}{2}$ ounce (14 grams). It was first used as money in the form of uncoined gold and silver. The Hebrews coined their first shekels about A.D. 66. Half and quarter silver shekels also were coined. Today, the word *shekel* is used as a slang term referring to money.

SHELBURNE MUSEUM. See VERMONT (Places to Visit).

SHELBY, ISAAC. See KENTUCKY (History).

SHEDRAKE. See MEGANSER.

SHELEPIN, *shehl YEH pihn*, **ALEXANDER NIKOLAEVICH** (1918-), was an important Russian Communist Party official from the 1950's to the mid-1970's. He became a member of the party's powerful Central Committee in 1952 and served on the committee's 11-member Secretariat from 1961 to 1967. In 1964, he was named to the Politburo, the policy-making body of the Russian Communist Party. In 1975, Shelepin was dropped from the Politburo and appointed to a minor government position. He was dropped from the Central Committee in 1976. Shelepin was born in Voronezh, Russia. WALTER C. CLEMENS, JR.

SHELEST, *shehl YEHST*, **PETER YEFIMOVICH** (1908-), was an important Russian Communist Party official from the 1960's to the mid-1970's. He served as first secretary of the Communist Party of the Ukraine—a Soviet republic—from 1963 to 1972. In 1964, he became a member of the Politburo, the national policy-making body of the Russian Communist Party's Central Committee. He was dropped from the Politburo in 1973 and from the Central Committee in 1976. Shelest was born in Andriivets, the Ukraine. WALTER C. CLEMENS, JR.

SHELL is a projectile. See AMMUNITION.